GeoReferencedPositionType XML Schema Example

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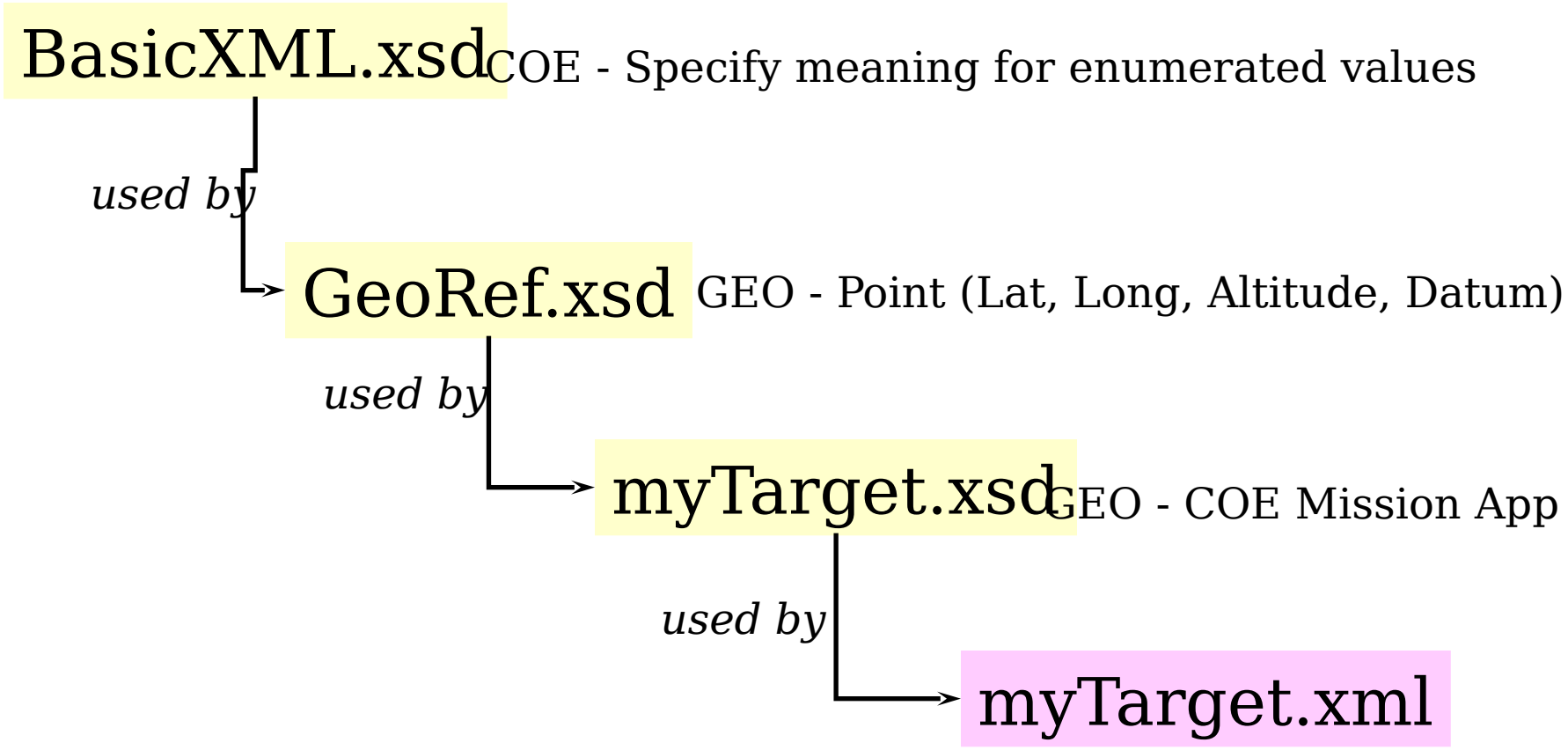
Dependencies



BasicXML.xsd

BasicXML.xsd - Notepad

File Edit Format Help

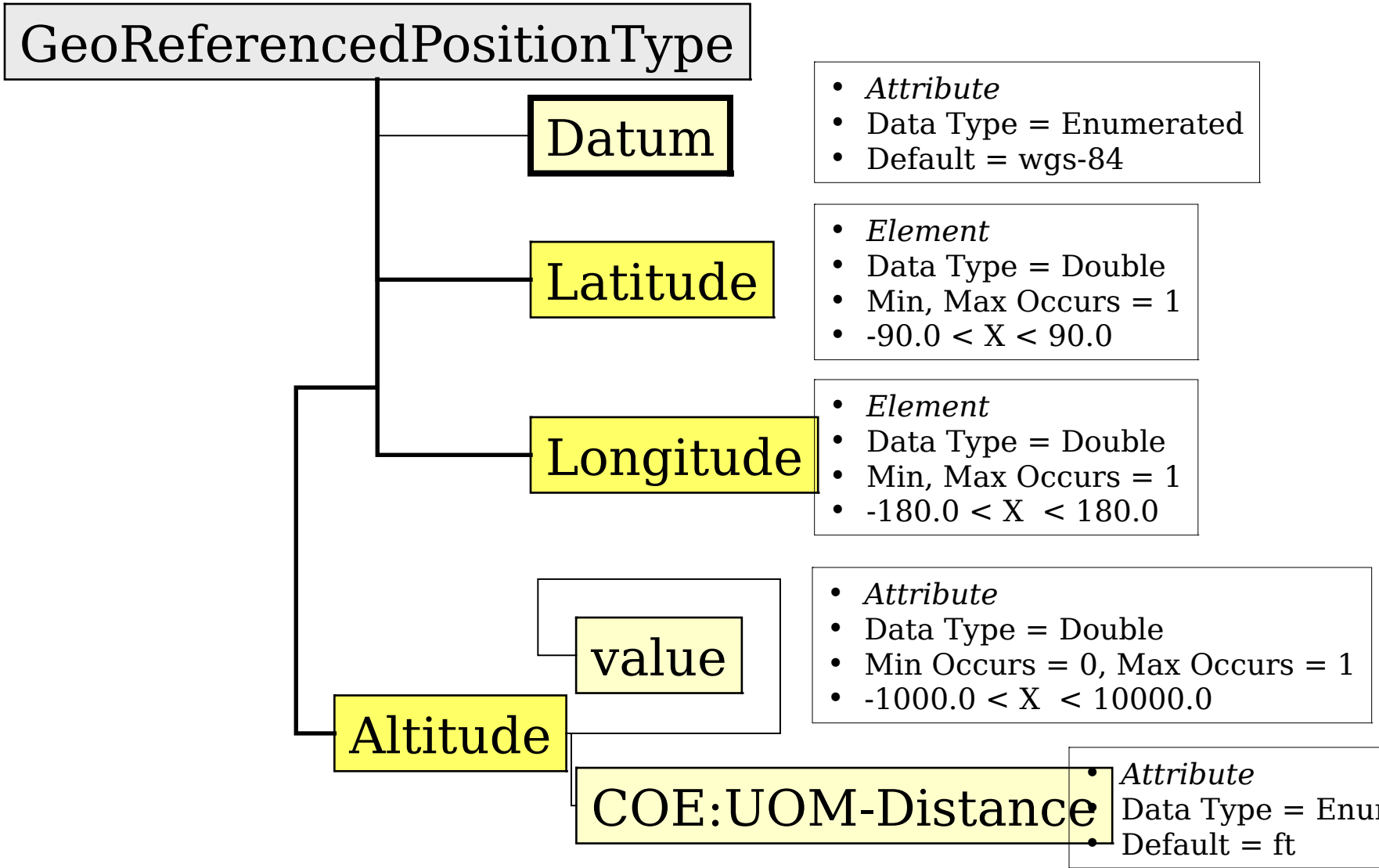
```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="http://diides.ncr.disa.mil/xmlreg/COE/BasicXML"
xmlns="http://diides.ncr.disa.mil/xmlreg/COE/BasicXML"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified" attributeFormDefault="unqualified" version="1.0">

<xsd:element name="Meaning">
   <xsd:annotation>
      <xsd:documentation>Explanation of the associated enumerated value.</xsd:documentation>
   </xsd:annotation>
   <xsd:simpleType>
      <xsd:restriction base="xsd:string">
         <xsd:maxLength value="254"/>
      </xsd:restriction>
   </xsd:simpleType>
</xsd:element>

</xsd:schema>
```

Usage (in GeoRef.xsd):

```
<xsd:enumeration value="wgs-84">
        <xsd:annotation>
          <xsd:appinfo>
            <COE:Meaning>World Geodetic System
1984</COE:Meaning>
          </xsd:appinfo>
        </xsd:annotation>
</xsd:enumeration>
```

GeoRef.xsd

http://diides.ncr.disa.mil/xmlreg/GEO/GeoRef.xsd



Declarations

```
<?xml version="1.0" encoding="UTF-8"?>

<xsd:schema targetNamespace="http://diides.ncr.disa.mil/xmlreg/GEO/My
xmlns:GeoRef="http://diides.ncr.disa.mil/xmlreg/GEO/GeoRef"
xmlns="http://diides.ncr.disa.mil/xmlreg/GEO/MyTarget"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:COE="http://diides.ncr.disa.mil/xmlreg/COE/BasicXML"
elementFormDefault="qualified" attributeFormDefault="unqualified" versi

<xsd:import namespace="http://diides.ncr.disa.mil/xmlreg/GEO/GeoRef"
schemaLocation="GeoRef.xsd"/>

<xsd:import namespace="http://diides.ncr.disa.mil/xmlreg/COE/BasicXML"
schemaLocation="BasicXML.xsd"/>

...

</xsd>
```

Datum

```
<xsd:attribute name="Datum" default="wgs-84">
  <xsd:simpleType>
    <xsd:annotation>
      <xsd:documentation>Datum</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="wgs-84">
        <xsd:annotation>
          <xsd:appinfo>
            <COE:Meaning>World Geodetic System 1984</COE:Meaning>
          </xsd:appinfo>
        </xsd:annotation>
      </xsd:enumeration>
      <xsd:enumeration value="abc"/>
      <xsd:enumeration value="xyz"/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:attribute>
```

Latitude

```
<xsd:element name="Latitude">
   <xsd:annotation>
      <xsd:documentation>given in degrees of arc relat
Equator as a signed numeric value of degrees North
      </xsd:documentation>
   </xsd:annotation>
   <xsd:simpleType>
      <xsd:restriction base="xsd:double">
         <xsd:maxInclusive value="90"/>
         <xsd:minInclusive value="-90"/>
      </xsd:restriction>
   </xsd:simpleType>
</xsd:element>
```

Longitude

```
<xsd:element name="Longitude">
   <xsd:annotation>
      <xsd:documentation>given in degrees of arc relat
Greenwich Meridian as a signed numeric value of deg
     </xsd:documentation>
   </xsd:annotation>
   <xsd:simpleType>
      <xsd:restriction base="xsd:double">
         <xsd:maxInclusive value="180"/>
         <xsd:minInclusive value="-180"/>
      </xsd:restriction>
   </xsd:simpleType>
</xsd:element>
```

Altitude

```
<xsd:element name="Altitude">
  <xsd:annotation>
    <xsd:documentation>given in meters above sea level</xsd:docum
  </xsd:annotation>
  <xsd:complexType>
  <xsd:complexContent>
    <xsd:restriction base="xsd:anyType">
      <xsd:attribute name="value">
        <xsd:simpleType>
          <xsd:restriction base="xsd:double">
            <xsd:maxInclusive value="100000"/>
            <xsd:minInclusive value="-1000"/>
          </xsd:restriction>
        </xsd:simpleType>
      </xsd:attribute>
      <xsd:attribute ref="COE:UOM-Distance" default="ft"/>
    </xsd:restriction>
  </xsd:complexContent>
  </xsd:complexType>
</xsd:element>
```

Unit of Measure

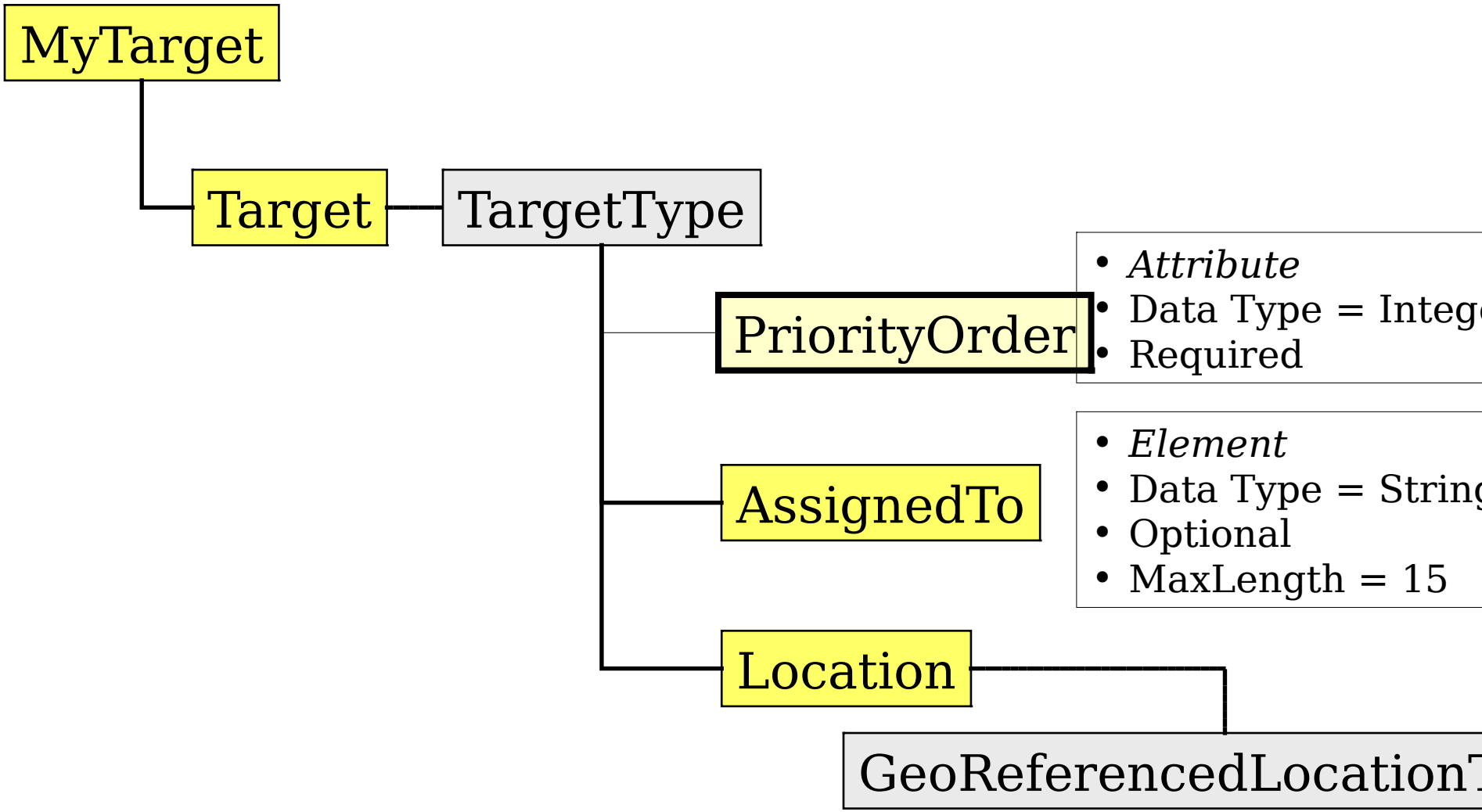
```
<xsd:attribute name="UOM-Distance" default="meter">
  <xsd:simpleType>
    <xsd:annotation>
      <xsd:documentation>Unit of Measure for Distance</xsd:documentatio
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="meter">
        <xsd:annotation>
          <xsd:appinfo>
            <Meaning>meters</Meaning>
          </xsd:appinfo>
        </xsd:annotation>
      </xsd:enumeration>
      :
    </xsd:restriction>
  </xsd:simpleType>
</xsd:attribute>
```

GeoReferencedPositionType

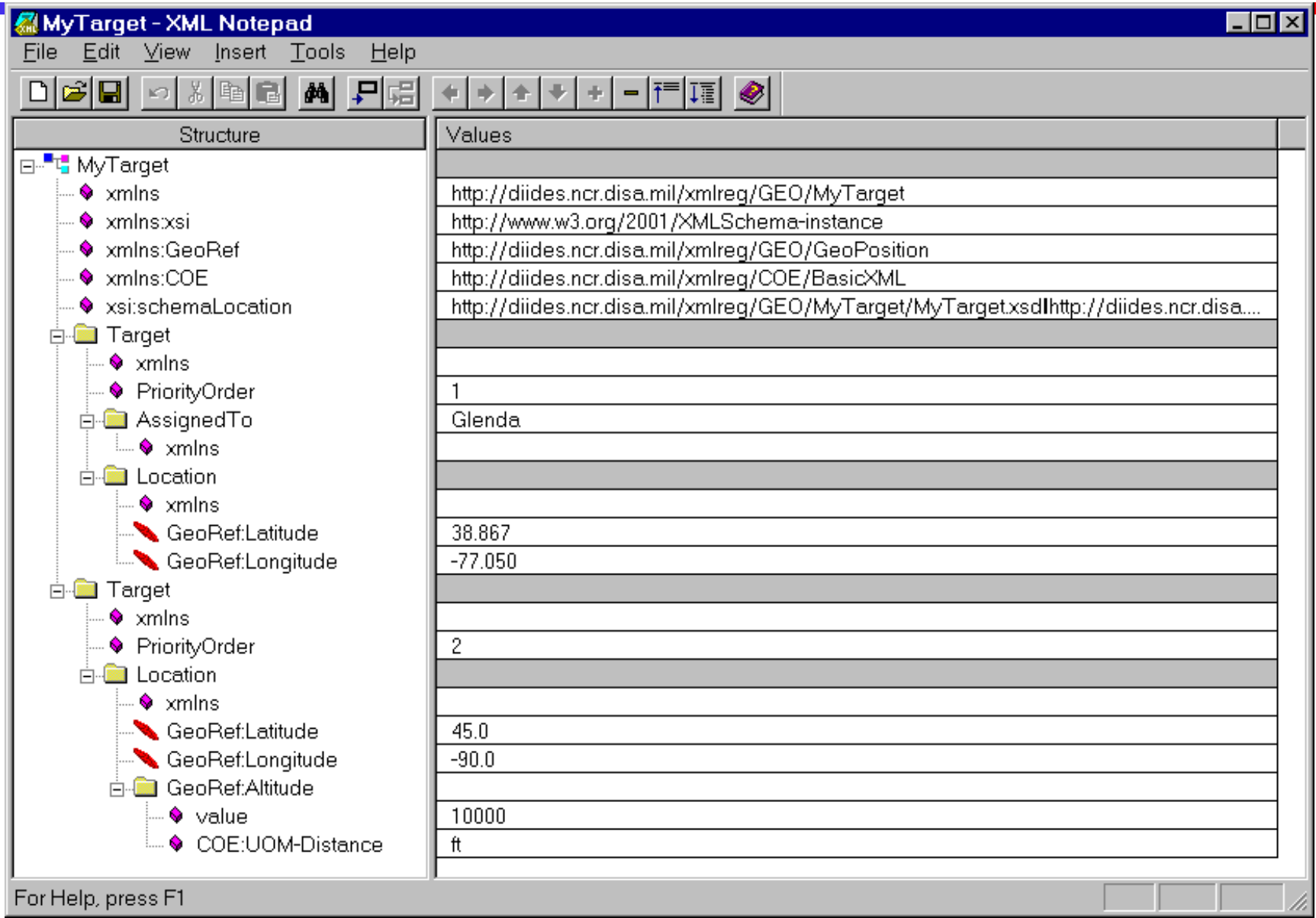
```
<xsd:complexType name="GeoReferencedPositionType"
  <xsd:annotation>
    <xsd:documentation>Latitude, Longitude, (optional)
{wgs-84 datum} e.g., Pentagon= Lat: 38.867, Long: -77.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="Latitude" maxOccurs="1" minOc
    <xsd:element ref="Longitude" maxOccurs="1" minO
    <xsd:element ref="Altitude" maxOccurs="1" minOcc
  </xsd:sequence>
  <xsd:attribute ref="Datum"/>
</xsd:complexType>
```

MyTarget.xsd

http://diides.ncr.disa.mil/xmlreg/GEO/MyTarget.xsd



MyTarget.xml



Definitions

- Datum
  - WGS 84 is an earth fixed global reference frame, including an earth model.
- Latitude
  - given in degrees of arc relative to the Equator as a signed numeric value of degrees North
- Longitude
  - given in degrees of arc relative to the Greenwich Meridian as a signed numeric value of degrees East
- Altitude
  - Value (double)
  - Unit of Measure-Distance
- LocationType
  - Latitude, Longitude, (optional) Altitude {wgs-84 datum} e.g., Pentagon = Lat: 38.867, Long: -77.050
- TargetType
  - PriorityOrder, AssignedTo, Location {LocationType}
- AssignedTo
  - Name of Person to whom target has been assigned.
- MyTarget {TargetType}
  - Collection of Target(s)

References

- http://www.eurocontrol.be/projects/eatchip/wgs84/wgs.html
- http://geotags.com/geo/geotags2.html
- http://www.getty.edu/research/tools/vocabulary/tgn/index.html
- http://www.iseran.com/gps/waypointml.html

XML Schema Options

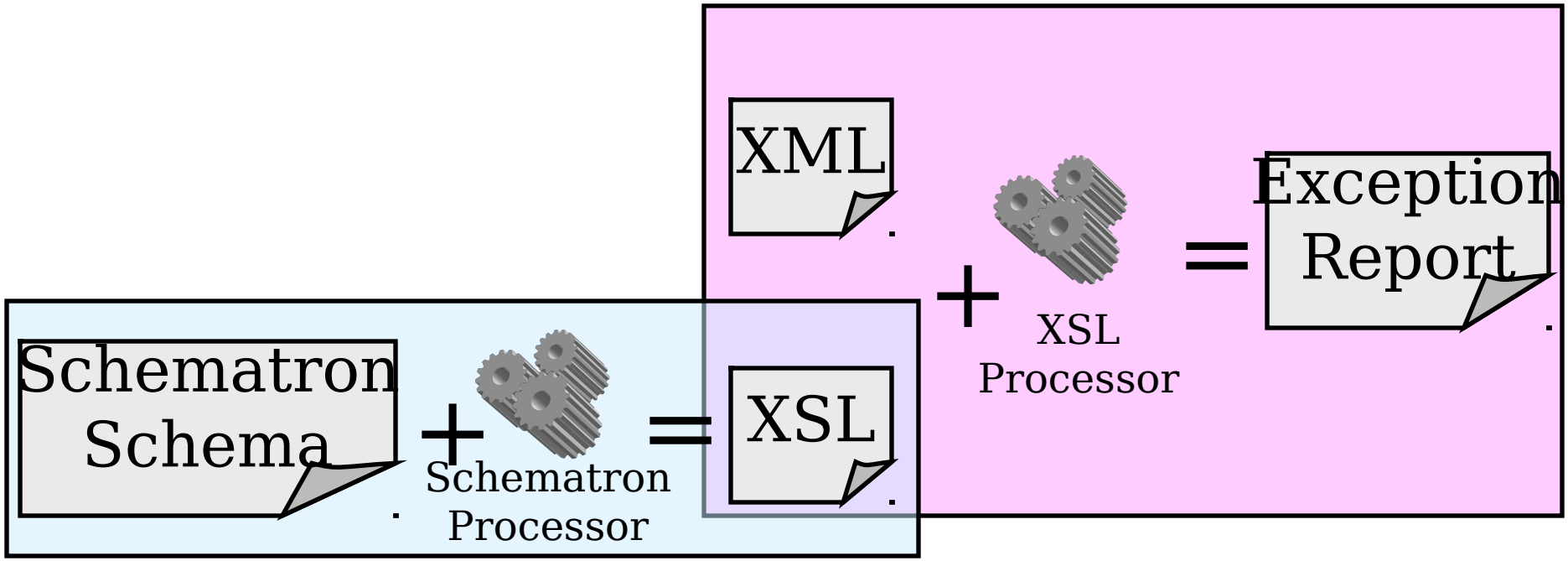
- base
- maxLen
- minExclusive, maxExclusive
- pattern
- enumeration

```
<simpleType name = "satOwnerType" base = "string">
        <maxLength value = "5"/>
</simpleType>
```

```
<simpleType name = "satelliteNumberType" base = "positiveInte
        <maxInclusive value = "99999"/>
</simpleType>
```

```
<simpleType name = "satellitePieceIdentifierType" base = "string">
        <pattern value = "[a-h|j-n|p-z|A-H|J-N|P-Z]{1,3}"/>
</simpleType>
```

Schematron Approach



Expressing Business Rules

	IDEF1x	RDBMS	DTD	XML Schema	TREX & Schematron
Intra-field Dependencies					
Data Type	X	X		X	X
Constraints	X	X		X	X
- Min, Max	X	X		X	X
- Enumerated Domains	X	X	attributes only	X	X
- Patterns	X	X		X	X
Inter-field Dependencies					
Contains	X	X	X	X	X
Associations	X	unnamed FK			
Required/Optional	X	X	X	X	X
Cardinality	partial	X	partial	X	X
Conditional	Not Avail	code		code, XSL	X